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# STATISTICAL BULLETIN

METROPOLITAN LIFE INSURANCE COMPANY

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## Nineteen Thirty-four a Good Health Year

NINETEEN THIRTY-FOUR, now closing, has been a good health year. Although many details are not as yet available, it is perfectly clear from the mortality experience of the Metropolitan Life Insurance Company that the general deathrate will be at most about 3 per cent higher than in 1933, which had the best record for all time. Even this small difference may in part disappear when correction is made for the advancing age of the population.

The year has been especially good for a number of diseases. Influenza caused only half as many deaths as in the previous year. Tuberculosis and diphtheria have both declined to new lows. While the deathrates for measles and whooping cough have been higher than in 1933, the figures for both have nevertheless remained low. Scarlet fever and typhoid fever deaths have been at about the minimum. In addition, suicides and homicides were both lower than in either 1933 or 1932.

On the other side of the picture, the pneumonia deathrate which had declined continuously from 1929 to 1933, showed a sharp upturn for 1934. This is difficult to explain in view of the improvement in influenza, as these two diseases usually rise and fall together. It is clear that, in most fatal cases, influenza was not a factor in the 1934 mortality from pneumonia. The deaths from the latter exceeded those of last year during the warm months as well as in the cold season. The mortality from accidents has been considerably higher than in 1933 or 1932, largely due to the increase in the number of those gainfully employed and to the greater activity of industry. Especially has this been true of automobile fatalities, which show an increase of about 11 per cent. The total number of automobile deaths in 1934 will be approximately 35,000, as against 31,000 the year before. This year has seen an immense increase of motor vehicles on American streets and highways, which implies greater chances for accident, fatal as well as non-fatal.

All of these points are based on the deathrate registered by sixteen million Metropolitan Industrial policyholders, who constitute a very good sample of the general population. Their experience, over many years, has been always confirmed by the official figures for the population as a whole, when they become available a year later.

# The Two Pneumonia Belts

UNUSUAL interest attaches to the course of the pneumonia deathrate during the most recent years, because in two of them, 1932 and 1934, the unexpected has happened. Since high deathrates for pneumonia and influenza usually go together we would have expected the year 1932, which began with an influenza epidemic, to record a high pneumonia mortality rate; on the other hand, that year closed with the lowest pneumonia deathrate on record up to that time. Again, in 1934, with reports from all over the country showing the lowest incidence of influenza in many years, and with the influenza mortality rate among Metropolitan Industrial policyholders at approximately one-half the figure recorded a year ago, we looked for a sharp decline in deaths from pneumonia. Instead, based on the mortality records of our Metropolitan policyholders, and on reports from the population of 39 cities, up to November 17, there has been a pronounced rise in the pneumonia deathrate in the United States. Among Metropolitan Industrial policyholders the rise, up to the end of November, amounted to 11 per cent.

In view of what has happened this year, more than usual interest attaches to the geographic distribution of the mortality from this disease. Data for the general population of the country, for the current year are restricted to the cities to which we have just referred. The facts, nevertheless, are sufficiently clear-cut to indicate that increased pneumonia mortality in 1934 is quite general throughout the country. There are available, however, deathrates for pneumonia in the general populations of the United States and Canada for a series of years; and these clearly indicate that there are certain well defined regions or belts in both countries where the pneumonia mortality rate runs much above the average. This is clearly shown in the map on page 4. In this map the states shown in solid color and in "cross-hatch" had pneumonia rates for 1932-1933 which were well above the average for these countries.

It is at once apparent that there are two clear-cut pneumonia belts. In the East, beginning with the Canadian provinces of Quebec, Prince Edward Island, Nova Scotia and New Brunswick, and continuing down the Atlantic Coast to Florida, every state with four exceptions (Connecticut, New Jersey, North Carolina and Florida*) have above-average pneumonia deathrates. In this Eastern pneumonia belt, we find such excessively high rates as 103 per 100,000 for Delaware, 97 for Maryland, 95 for New Brunswick, 89 for Massachusetts, 88 for New York, 84 for Vermont and Nova Scotia, 82 for Prince Edward Island and New Hampshire, and 81 for Pennsylvania, South Carolina and Georgia. Included in this same belt are two non-coastal states, Tennessee

*In all of these four, except Florida, the deathrate very closely approaches the average.

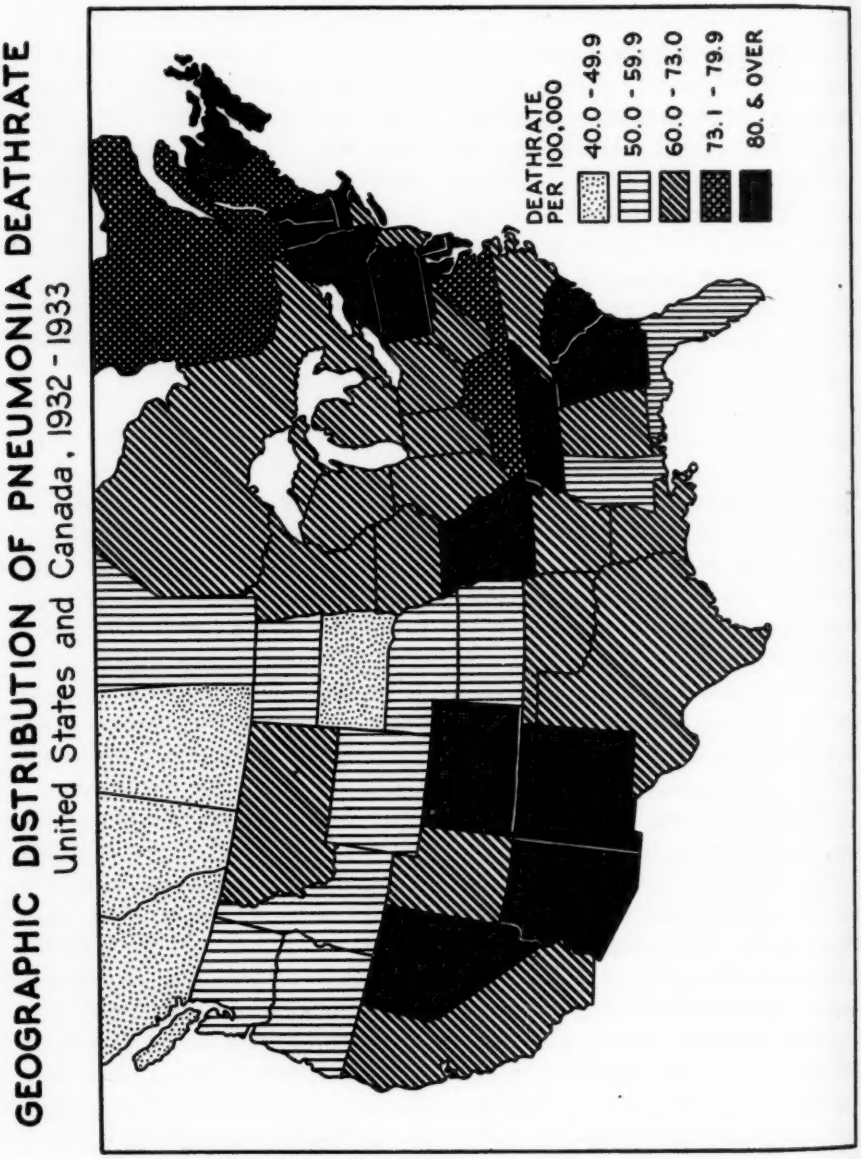
with a pneumonia rate of 81 per 100,000 and Missouri with 91. This belt also includes Maine, Virginia and Kentucky, all with pneumonia mortalities well in excess of the average for the United States.

The second pneumonia belt consists of four states in the Mountain Region, and it is interesting to observe that these commonwealths (Colorado, New Mexico, Arizona and Nevada) are the only states west of Missouri where there is a high pneumonia deathrate. It is in these Mountain States that we find the highest pneumonia deathrates in the country, the figure for Nevada being 106 per 100,000, that for Arizona 99, for New Mexico 98 and for Colorado 98.

The map brings out clearly the fact that latitude and cold climate are not necessarily reflected in high mortality from pneumonia; for the very lowest pneumonia rates in either country are found in the Canadian provinces of Saskatchewan, British Columbia and Alberta, as well as in South Dakota, which has the lowest pneumonia rate of the American states. South Dakota lies in the same latitude as New York and New England, where the pneumonia deathrate runs very high. And, there is the further evidence supplied by the high rates in warm climates like those of South Carolina, Georgia, Arizona and New Mexico. It is also apparent that a high percentage of negro population does not necessarily imply a high pneumonia rate (although the negro mortality from this disease is much higher than that among the whites); for, although South Carolina and Georgia have very high pneumonia mortality rates, the figures for Florida and Mississippi, with their large negro population, run about one-third lower than the average for the country as a whole. It is equally evident that high average humidity does not, in itself, produce high pneumonia mortality. It does appear, however, that the combination of a cold climate and low average humidity operates in favor of a low pneumonia deathrate, for this is the condition found in such Canadian provinces as Alberta and Saskatchewan and in a number of American states where the pneumonia deathrate runs consistently low.

It is true that all of the four Mountain States, which form the pneumonia belt in that section, also record, year after year, high deathrates from tuberculosis. But high or low deathrates from these two diseases do not always go hand in hand. New England, for example, has a high pneumonia deathrate combined with a tuberculosis mortality figure that is well below the average. The same is true of Pennsylvania. It is a fact, nevertheless, that 13 of the 19 states which have above-average pneumonia deathrates also register more or less excessive figures for tuberculosis. In all probability the pneumonia mortality in Colorado, Arizona and New Mexico, as well as that from tuberculosis, would be considerably lower if calculations were made on the basis of deaths among permanent

white residents alone. The large proportion of Mexican and Indian populations in the states of Arizona and New Mexico also plays some part in accounting for their high deathrates from pneumonia.



# The Decline in the Birthrate Is World Wide

THE decline in the birthrate extends to practically every civilized nation in the world. It has been going on for more than half a century; and the latest available data, which relate to 37 countries, and with every continent save Africa represented, show that the rapidity of the fall has been accentuated in the last five years.

In only one country, Roumania, is there any indication of a rising birthrate since 1928. The rise in this country is inconsequential and may even be fictitious, as Roumanian registration practice has much improved in recent years. The high birthrate of the Philippine Islands has been stationary for five years. With these two exceptions, however, decreases are everywhere in evidence, ranging from a maximum drop of 21.6 per cent in Chile to a minimum decrease of 2.7 per cent in Venezuela. Australia closely follows Chile with a fall of 20.7 per cent, and then in order come Germany (18.8 per cent), Palestine (18.3 per cent), Austria (13.1 per cent), Finland (13.0 per cent), New Zealand (12.8 per cent), United States (12.1 per cent), Poland (12.0 per cent), Ceylon (11.7 per cent), Hungary (11.0 per cent), Jamaica (10.1 per cent) and Uruguay (10.0 per cent). There are thus 13 countries whose birthrates have dropped, on the average, from 2 to 4 per cent per annum in five years.

Americans will be interested, in particular, in the relative status of the United States in comparison with that of other countries. There is first the noteworthy fact that of the 37, only 9 had, in 1932, birthrates lower than our own. Second, our 1932 rate (17.4 per thousand) was 28 per cent lower than the average for the 37 countries combined (24.2). Third, the drop in our birthrate of 12.1 per cent was much sharper than the average fall for the 37 countries (8.7 per cent). In the two years since closed this trend has continued undiminished.

We pointed out in the STATISTICAL BULLETIN for March 1933, that the birthrate was falling in every state in this country, although there was much variation in the velocity of the decline. The greatest drops, in America, have occurred in the northeastern states, where the population is highly industrialized. With few exceptions, the agricultural states have shown below-average decreases in their birthrates. How acute the situation has become in at least one of the New England States is emphasized by the Director of Public Health of Rhode Island, DR. LESTER A. ROUND, who warns, in the RHODE ISLAND VITAL STATISTICS BULLETIN for October, that "if the present trend continues until 1938, the number of births will just equal the number of deaths and internal growth of our state's population will cease." In our opinion, this contingency is not far off for a large number of other states.

The figures for the various

countries disclose several items that may occasion surprise. For example, France is no longer a country with a rapidly declining birthrate. The French rate, indeed, now exceeds that of Germany, and in the five-year period studied, the velocity of the decline in the German birthrate was about 4 times that in France. Indeed, with the single exception of Sweden, Germany recorded, in 1932, the lowest birthrate of the 37 countries studied.

The factor of religion seems to have played a negligible part in the relative declines in the birthrates. Marked drops have occurred in countries with predominantly Catholic populations, notably Chile, Austria, Poland, Czechoslovakia, Italy, Argentina and Uruguay, as well as in countries where Protestants predominate, like the United States, Australia, New Zealand, Sweden and Finland. Relatively small declines have been observed in both the Irish Free State and Northern Ireland, but the former showed the greater drop of the two.

The birthrate of the United States is declining approximately twice as fast as that of Canada, its neighbor to the north.

The problem of the declining birthrate is one which has wide social and economic significance because of its effect on the structure of populations. As the birthrate drops, the average age of the population increases; those with youth and vigor form an ever decreasing proportion of the total, while the old and the dependent constitute a larger part. In the United States, in particular, the decline in the birthrate has been greatest among those elements of the population which are financially best able to rear families; this is true, in particular, of our native stock, which seems destined to form an ever smaller fraction of the American people.

## Is the Control of Tuberculosis in Sight?

THE marked decrease in the mortality from tuberculosis is the outstanding achievement in the modern public health campaign. In 1900, deaths from all forms of tuberculosis in the ten Original Registration States and the District of Columbia numbered 195 in 100,000 population. In 1933 the rate was only 56 in the same area. This is a decrease of 71 per cent since the beginning of the century and represents a saving of 170,000 persons who would have died from tuberculosis in 1933 had the rate of 1900 prevailed throughout the United States in that year.

Beyond question, the general improvement in the environment in which people live and work has favorably influenced the mortality from tuberculosis; but the application of our increased knowledge of this disease and of its treatment has also helped materially to reduce the number of deaths. Add to the saving in mortality the number of cases that have been arrested; the

number of persons who have been completely or partially restored to work; the number of young children who have been spared from sickness and orphanhood; and the number of families that have been saved from disruption by the death of a parent from tuberculosis, and we have a most gratifying picture of the splendid achievement of the fight against this disease. The agencies of education and of treatment built up by the anti-tuberculosis campaign have been both efficient and successful.

Even during the trying period of unemployment and of economic unrest, the deathrate from tuberculosis has continued to decline. In 1933, deaths from tuberculosis numbered 59.5 per 100,000 in the United States as a whole, as against 71.0 in 1930, a decline of 16.2 per cent in three years. By every indication the figure for 1934 will continue the trend of improvement.

When the states are considered separately, we find considerable variability, however. The range of the decline in the last three years is between a maximum of 32 per cent and a minimum of 2 per cent. Two states show increases, 9 per cent in Idaho and 3 per cent in Delaware. Seven states show decreases from tuberculosis of 25 per cent or more; 10 a drop ranging between 20 per cent and 25 per cent; 17, between 15 per cent and 20 per cent; 6, between 10 per cent and 15 per cent. In the remainder there were declines of less than 10 per cent. These variations in the recent decline in tuberculosis mortality should, however, be considered in relation to the relative ranking of the states in their tuberculosis deathrates, since, as the deathrates from tuberculosis approach a minimum, it becomes increasingly difficult to effect further reductions. It is, therefore, not to the discredit of states with low tuberculosis mortality rates when they fail to show large declines from year to year. There are some striking exceptions even to this general rule. A few states with very low rates show pronounced decreases since 1930, North Dakota and Utah, for example.

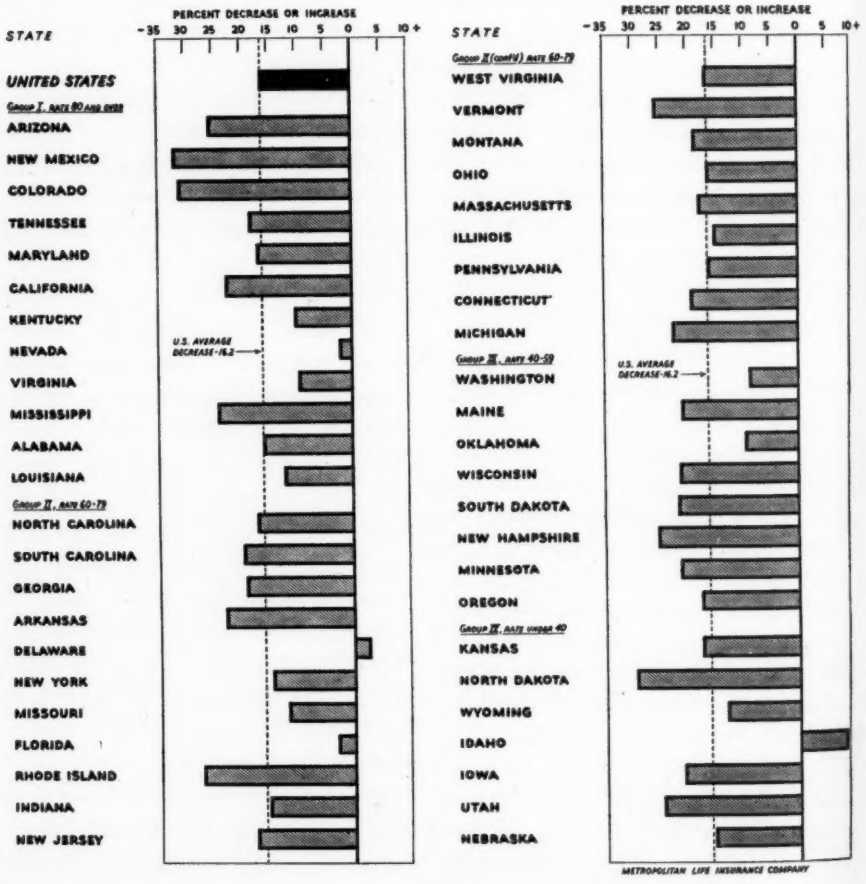
To obtain a clearer picture of the situation we have prepared a graph which portrays the changes within recent years. The states have been grouped into four classes according to their deathrates from tuberculosis in 1930. The bars opposite each state show the change in tuberculosis mortality that has taken place since 1930. The first group consists of 12 states with tuberculosis deathrates of 80 or over in 1930; the second of 20 states with rates ranging between 60 and 80; the third of 8 states with rates between 40 and 60; and the fourth of 7 states with rates of less than 40 per 100,000 population. The state of Texas is omitted as it was not in the Death Registration Area for the year 1930.

Reference to the graph shows that in Class I, the group with comparatively high tuberculosis death-

rates, 4 states are not maintaining the average rate of decline. These are Kentucky, Virginia, Nevada and Louisiana. In Class II, Delaware, Florida and Missouri are lagging behind the other states. In Class III, the same is true for Washington and Oklahoma. In Class IV the death-rates from tuberculosis are already so low that no state can be said to be lagging. It is true that Idaho showed a higher rate in 1933 than in 1930, but since the actual death-rate in the later year was only 37 deaths from tuberculosis in every 100,000 population, one can hardly find fault with health progress in that state. Altogether, then, there are 9 states in which progress has been much below-average during the three past years, and where more effective measures for the control of tuberculosis are called for. The best evidence of the extent to which

## TUBERCULOSIS IN THE UNITED STATES

Percent decrease in deathrate, by states: 1930–1933



improvement has taken place and to which further progress is possible is afforded by the fact that 10 states in 1933 had rates under 40, and that seven others had rates between 40 and 50 per 100,000 of population. The most encouraging fact is this ever-increasing number of states where the deathrate from tuberculosis is approaching a figure of 50 per 100,000, which, by common consent, is considered the dividing line between the major and minor causes of death.

Despite the gains that have been made, tuberculosis is still one of the principal causes of death in early adult life. The disease disables and kills just at the period of life when one begins to be productive and socially useful. In the experience of the Industrial Department of the Metropolitan Life Insurance Company, for example, the deathrate from tuberculosis among white males, in the age period 15 to 19, is four and one-half times the rate in the preceding five years. Among white females from 15 to 19 the tuberculosis deathrate is nearly five and one-half times the rate among girls 10 to 14. In the age groups, 20 to 34 years, the rate for white women reaches its maximum. The anti-tuberculosis campaign must more and more concentrate its efforts at these and earlier ages of life, to discover the cases even before they are active and dangerous, to provide the necessary facilities for their care and arrest and to set up the vital follow-up work in families to prevent new infections in the children that are coming along. Through such concentrated effort, great strides can be taken quickly and effectively to bring tuberculosis under further control. It is particularly interesting in this connection to observe that during the last three years, the greatest improvement in the tuberculosis deathrate has been accomplished between the ages of 10 and 19. The rates at these ages in 1933 were approximately 40 per cent lower than they were in 1930. In view of the large tuberculosis death toll among young men and women, this is indeed an encouraging aspect of the situation. We are in fact rapidly approaching a point where the end of the fight against tuberculosis is in sight. A continuance of the campaign along approved lines should before very long result in its practical control.

## Health Record for November, 1934

At the end of the eleventh month, the year-to-date mortality rate of the Metropolitan Industrial policyholders was only 3.5 per cent higher than that for the like part of 1933. Inasmuch as 1933 was a record health year, it is apparent that the health situation among these millions of insured wage-earners and their dependents is good. The cumulative January-November deathrate among Metropolitan policyholders in Canada was only 7.2 per 1,000, which is identical with

the record low point registered only last year in that country.

The deathrate for the month of November (8.4 per 1,000) was identical with that registered for this month in 1933.

At the end of November, the year-to-date increases in the deathrate for certain important causes of death were as follows: for pneumonia, 11.0 per cent; for accidents, 7.6 per cent; for cancer, 6.2 per cent; for heart disease, 5.4 per cent. These increases have been only partly counterbalanced by a 45.1 per cent drop in deaths from influenza and a decline of 3.6 per cent in the mortality from tuberculosis. It is now clear that 1934 will mark a slackening in the velocity of the decline in the tuberculosis deathrate, as the drop between 1932 and 1933 was 7.3 per cent and that between 1931 and 1932, 8.4 per cent. The decline in 1934, to date, for tuberculosis of the respiratory system alone was 5 per cent. It is thus clear that we have had a slight rise during the current year in the deathrate from non-respiratory tuberculosis.

The deathrate for the large cities of the United States during the month of November was 11.0 per 1,000 estimated population. This may be compared with 10.4 for October and with 11.1 for November, 1933. The communicable diseases which showed increased incidence during November, as compared with October, were influenza, measles, scarlet fever and smallpox. Those for which fewer cases were reported were diphtheria, poliomyelitis and typhoid fever. Comparison with November of last year shows more sickness in 1934 from influenza, measles, scarlet fever, poliomyelitis and smallpox, but fewer cases of diphtheria and typhoid fever.

The following table shows the mortality among Industrial policyholders for November, 1934, October, 1934, and November, 1933, together with the cumulative rates for the first eleven months of each year.

## *METROPOLITAN LIFE INSURANCE COMPANY*

*Deathrates* per 100,000 for Principal Causes. Weekly Premium-Paying Business in Industrial Department. All Ages (Annual Basis).*

MONTHS OF NOVEMBER, 1934; OCTOBER, 1934, AND NOVEMBER, 1933

| CAUSES OF DEATH | ANNUAL RATE PER 100,000 LIVES EXPOSED* | | | | |
|---|---|---|---|---|---|
| | Nov. 1934 | Oct. 1934 | Nov. 1933 | Cumulative January-November | |
| | | | | 1934 | 1933 |
| TOTAL—ALL CAUSES | 841.2 | 827.9 | 840.2 | 886.2 | 855.9 |
| Typhoid fever | 1.0 | 2.2 | 1.8 | 1.6 | 1.6 |
| Measles | .6 | .4 | .5 | 2.9 | 1.5 |
| Scarlet fever | 2.2 | 2.2 | 2.1 | 2.6 | 2.6 |
| Whooping cough | 2.6 | 2.5 | 1.8 | 3.8 | 2.3 |
| Diphtheria | 3.2 | 3.1 | 4.6 | 2.1 | 2.5 |
| Influenza | 8.8 | 5.0 | 9.4 | 11.2 | 20.4 |
| Tuberculosis (All forms) | 56.1 | 60.0 | 52.4 | 62.0 | 64.3 |
| Tuberculosis of respiratory system | 50.2 | 53.1 | 47.3 | 54.6 | 57.5 |
| Cancer (All forms) | 101.6 | 102.0 | 94.9 | 99.1 | 93.3 |
| Diabetes mellitus | 23.3 | 22.4 | 24.8 | 24.9 | 23.8 |
| Cerebral hemorrhage; apoplexy | 66.9 | 58.8 | 66.4 | 65.5 | 63.6 |
| Diseases of heart† | 154.4 | 151.7 | 158.1 | 168.5 | 159.9 |
| Pneumonia (All forms) | 56.1 | 39.9 | 63.9 | 67.7 | 61.0 |
| Other respiratory diseases | 10.8 | 9.1 | 11.3 | 9.9 | 9.9 |
| Diarrhea and enteritis | 10.8 | 20.3 | 9.7 | 12.0 | 10.9 |
| Chronic nephritis (Bright's disease) | 65.5 | 61.0 | 67.3 | 67.3 | 66.7 |
| Puerperal state—Total | 6.8 | 8.3 | 7.9 | 9.0 | 9.2 |
| Suicides | 8.9 | 9.1 | 8.0 | 9.7 | 9.8 |
| Homicides | 5.5 | 7.7 | 6.8 | 6.0 | 6.1 |
| Accidents—Total | 60.0 | 61.2 | 54.7 | 59.7 | 55.5 |
| Automobile accidents | 26.2 | 25.7 | 21.9 | 21.5 | 19.4 |
| All other diseases and conditions | 196.0 | 201.0 | 193.7 | 200.6 | 191.0 |

*The rates for 1934 are subject to slight correction, since they are based on provisional estimates of lives exposed to risk.

†Excludes pericarditis, acute endocarditis, acute myocarditis and angina pectoris.

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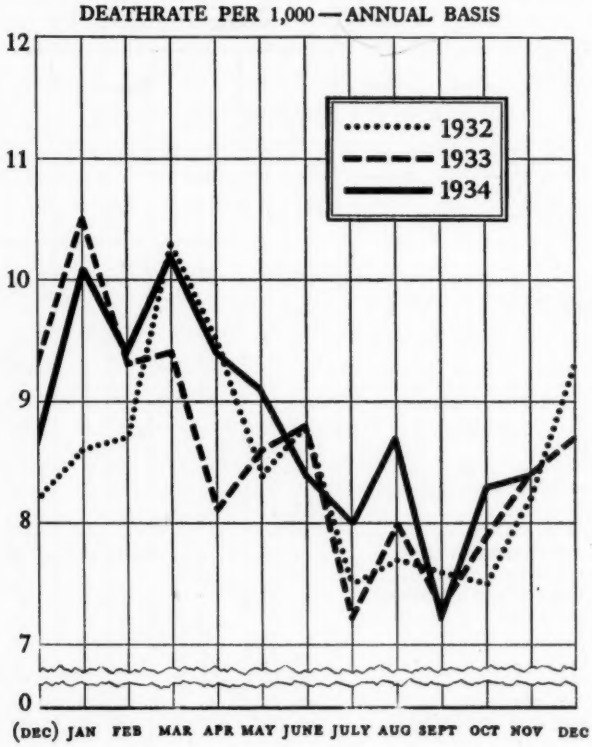
Metropolitan Life Insurance Company,
1 Madison Avenue, New York City.

# *DEATHRATES FROM ALL CAUSES*

*in the Metropolitan Life Insurance Company*
*Industrial Department*




| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1932 | 8.6 | 8.7 | 10.3 | 9.5 | 8.4 | 8.8 | 7.5 | 7.7 | 7.6 | 7.5 | 8.2 | 9.3 |
| 1933 | 10.5 | 9.3 | 9.4 | 8.1 | 8.6 | 8.8 | 7.2 | 8.0 | 7.3 | 7.9 | 8.4 | 8.7 |
| 1934* | 10.1 | 9.4 | 10.2 | 9.4 | 9.1 | 8.4 | 8.0 | 8.7 | 7.2 | 8.3 | 8.4 | |

** Rates for 1934 are provisional.*

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